THE FEASIBILITY OF CLEAR CAST RESIN AS A PAINTING MEDIUM.

A Thesis

Presented To

the Faculty of the Department of Art

Kansas State Teachers College

Emporia, Kansas

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

---

by

Gary Lee Pippin

July 1969

Th

Approved for the Art Department

Approved for the Graduate Council

ACKNOWLEDGEMENTS

I wish to express my appreciation to the members of the Kansas State Teachers College Art Department for their assistance in my pursuit of the degree, Master of Arts.

The guidance and assistance given me by Mr. Don Hazelrigg far exceeded his normal duties as an instructor and committee chairman, and for this I am extremely grateful. My special thanks to him and to Dr. J. Warren Brinkman, Mr. Rex Hall, and Mr. Richard Stauffer.

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

Personal Works Plates I--XII

CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

Since unusual media and techniques are frequently of considerable interest to many contemporary artists, technological advances and the desire for new and contemporary forms have been partially responsible for many new media developments. Stainless steel, plastics, neon lights, painted metals, glass, fiber glass, aluminum, vinyl bags, and many other unlikely materials have found a place in the ever changing world of the visual arts.

Plastics, as art media, have only become somewhat common since the mid 1960's. While there are countless forms of plastics, (many of which have been established as crafts media) thermosetting plastics, such as Clear Cast, seem to be relatively unexplored in the painting field. At the beginning of this study the writer hoped, that if Clear Cast was found to be physically suitable as a painting medium, another new method could be suggested for broadening the means by which artists might express their ideas.

I. THE PROBLEM

Statement of the problem. It was the purpose of this study (1) to determine, through experimentation, the practicality of using Clear Cast as a painting medium: (2) to explore through paintings, the results of the experiments: (3) to summarize the painting process.

Importance of the study. Few progressive artists resist new media since progress in art materials often will parallel the prime media of "the day". While many artists will never care to express themselves by other than traditional means, they may desire to see another do so. Plastics comprise one of the most important forms of material in use today in general manufacturing. Clear Cast is an easily attainable plastic, completely clear, and possibly, capable of producing an ideal medium for the transparent paintings of today. Clear Cast is also a binder and may serve as an excellent collage medium.

If Clear Cast could be found to be a suitable medium for painting, it would provide a reasonably priced, easily acquired medium that artists could use if they desired. To date, literature on actual painting techniques with resin is inadequate.

Limitations of the study. Since the properties

of plastics are very complicated and this paper intended to stress painting methods and techniques, little discussion is devoted to the properties of plastic. An excellent source for the chemical aspects of plastic is Thelma Newman's Plastic As An Art Form, Chilton Company. The resin was of interest as a painting medium and this thesis limits its research to an examination of the versatility of Clear Cast when subjected to various techniques.

It must be made apparent, that the testing of permanency was beyond this researcher's capability. Resource books, concerned with similar resins, did attest to resins' stability and permanency but literature cautioned readers against assuming that all resins would react exactly alike. Most techniques attempted in this study involving Clear Cast, should be applicable to other thermosetting plastics, but since all commercial plastics can have peculiar effects, some experimentation with a particular brand may be necessary.

II. DEFINITIONS OF TERMS USED

Clear Cast. Clear Cast is an extremely clear Polyester Resin of high viscosity that hardens when mixed with a catalyst. It is a thermosetting plastic

with Clear Cast being the commercial name.

Catalyst. A catalyst is a toxic chemical that initiates the reaction which causes the resin to set up hard. The name for this material is Methyl Ethyl Ketone Peroxide.

Cure. Cure, n.--The changing of a resin from a liquid to a solid. Cure, v.--To change the properties of a plastic by chemical reaction, usually accomplished by the action of heat or catalyst or both, with or without pressure. Clear Cast changes its properties through the addition of a catalyst and without pressure. Complete curing of the resin may take several weeks even though the resin appears to be cured.

Dye. The dyes referred to in this paper were manufactured by American Handicrafts Company which is a Division of Tandy Corporation. The transparent dye contains Methyl Ethyl Ketone which is harmful or fatal if swallowed and it must be used in a well ventilated area. The transparent dyes were sold in one-half fluid ounce jars and the opaque colorants were supplied in sets containing five different colors.

Exotherm Heat. Heat generated by chemical reaction.

Gel. Gel is the intermediate stage in which the plastic is neither dominately liquid nor solid.

Mylar. A trade name for a thin sheet of dense plastic used in these painting processes to obtain a smooth surface.

Thermosetting Plastic. Thermosetting plastics are those plastics which set and harden by exotherm heat. Subsequent heating (at less than 1500 degrees Fahrenheit) does not change the hardened form. The plastic undergoes a chemical change and cannot be returned to its original state.

III. HYPOTHESES

1. Clear Cast casting resin will adhere to both canvas and masonite.
2. Clear Cast resin can be colored with various paints such as acrylics and oils in addition to the transparent and opaque dyes mentioned previously in the Definitions of Terms.
3. Clear Cast resin may be adapted to a variety of painting styles and techniques without unusual or excessive preparation.

IV. METHODS OF PROCEDURE

In this research it was necessary to try to resolve the hypotheses through experimentation in the studio in which various painting styles and application

techniques were attempted. The resin was evaluated on its ability to conform to this artist's intentions and whether or not the physical properties of the resin dictated painting styles or techniques.

Several painting grounds were used in an effort to find at least one suitable base. Also various colorants such as ink, acrylic, oil, metallic pigments, and dyes, were mixed with the resin and samples were made. Notations were recorded from observations concerning the ability of the colorants to blend, dissolve, and dry. In addition to the sample shapes, twenty-two works were attempted using the above colorants.

There were two application techniques, poured and painted. Notes were made in connection with any difficulties observed in either of these techniques.

The resin was also evaluated for its ability to retain collage objects. Items were placed in the resin, and upon curing the embedments were pryed loose, when possible. In removing the embedments the degree of difficulty involved was noted.

CHAPTER II

REVIEW OF THE LITERATURE

Literature related to plastics is not uncommon for those who desire to know about crafts. In fact, many books come complete with instructions and diagrams illustrating how to make projects, however, resin painting is not discussed in these books. The artist desiring to paint with this medium will find little help in the literature to date, if he is seeking actual painting methods. It would be an error to discount the use of these books, however, because much of the material that is related to crafts can be used by the painter since chemical properties often remain the same.

I. LITERATURE CONCERNING THE PROPERTIES OF RESIN

The thermosetting plastics once formed are subject to chemical change and can no longer be returned to their natural state. A cross-linking of the plastic forms a chain of molecules and holds them tightly together. The forming of the chain hardens upon polymerization and

is no longer subject to melting.[1]

Polyester resins have proved to be rather efficient casting resins whether applied in thick or thin layers. The resins have properties that may at first glance seem strange to the layman. "The queer thing about the setting agents, or catalysts, is that you need proportionately less for big castings than for small ones."[2] Two major factors which affect the amount of catalyst are the temperature of the liquid and the thickness of the pour. The thicker the pour, the less catalyst per ounce required. Too much catalyst will cause excessive heating of the resin and the plastic may crack.

The plastic was found to be rather stable when exposed to heat. Bick stated that it would not soften appreciably at temperatures below 250 degrees and when higher temperatures were applied, the plastic tended to harden even more. Research revealed that boiling the plastic in water had no effect on its shape.

---

[1]Thelma R. Newman, Plastic As An Art Form. (Philadelphia: Chilton Co., 1964), p. 24.

[2]Harry Walton, Plastic For the Home Craftsman (New York: McGraw-Hill Book Co., Inc., 1951)

The resins tested to date had reasonably good color stability since most colors remained stable under indoor light and yellowed only slightly when exposed to the sun. A wide range of colors was made possible when various pigments and dyes were used.

The color theory as described by Alexander F. Bick follows:

> Relatively transparent colors for polyester plastics are produced by mixing the primary or secondary color pigments with the clear resin separately or in pairs. For example, blue added to the resin, or blue and green added to the resin in combination, produce a clear, colored plastic.
>
> Opaque colors can be produced in either of two ways. The most common way is to mix white with a color. The other method is to add a third primary to a mixture of two primary colors. For example, mixing blue and yellow produces a transparent green. If a third primary, red, is added, the plastic becomes an opaque, muddy color. The opaqueness will result from the combination of three primaries, or combinations of their mixtures, tints, or shades.[3]

Newman stated that colorants serve three functions: decoration, filler, and stabilizer. The painter, as a rule, is most often interested in what color can do in relation to decoration or mood. Colorants that have

---

[3]Alexander F. Bick, Plastics: Projects and Procedures with Polyesters (Milwaukee: Bruce Publishing Co., 1962), P. 2.

mineral value will increase the strength of the resin if not used excessively. It is necessary to understand that colorants can weaken the medium if mixed in a ratio excessive to the proportion of resin.

It is necessary to establish that the research listed in the preceeding pages was not conducted on Clear Cast but on similar plastics. While Clear Cast should react in a similar manner, some of the properties may vary.

II. LITERATURE JUSTIFYING THE USE OF RESIN AS A PAINTING MEDIUM

Resin has been used for making jewelry, garden pools, awnings, decorative panels, sun screens, trays, fishing rods, helments, steel-strong boat hulls, pipe and pipe fittings and many craft projects. Although painting was relatively unexplored in this medium, many physical properties of resin were made known to the artist. Thelma Newman's Plastic As An Art Form deals more with plastic as a painting medium than other sources but even it only skims the actual painting techniques and makes no reference to Clear Cast.

Similar resins have been tested for sculptural

possibilities, and are well established as successful media. The clear sculptures reflect delicate lighting created by the angles and planes of muscular features. Both sides of the figures are seen at the same time due to the resin's clarity and it is this clarity that may give glazing techniques a big boost. The following quotes by people in the arts, indicate that plastics are finding a successful place in the art field: "Aptly named 'Solid Light', this new sparkling show demostrates how new materials can inspire an artist."[4]

Resin as a sculptural medium has been hailed by Arts Magazine when Frank Gallo's work was reviewed.

> More of the same-all of it striking. The materials are polyester resin shaped in silicone molds, worked over with a blow torch, steel wool, and sharp instruments then--tinted to that waxen but luminous approximation of flesh.[5]

Newman on plastics, "... these new materials reach frontiers heretofore unknown to creative users of traditional media because they are capable of going beyond the capacity of other substances."[6]

---

[4]Irene Hamar, "Lucite and Plexiglas Sculpture," Art Magazine, XLII (Dec.-Jan., 1968), 62.

[5]Frank Gallo, Art Magazine, November, 1967, p. 57.

[6]Newman, op. cit., p. 3.

> Colorful polyester resins open a wide new field for art expression. Beautiful polyester panels, grills, and columns are appearing in modern architecture. From this beginning, persons with a feeling for design see in polyesters valuable materials for arts and crafts.[7]

> They are known for their ease of handling, even in the liquid state, and for their property of curing without the formation of liquids or gases. They color easily... .[8]

The above quotes refer to resin in all phases of use and not just painting, however, it should be noted that it is likely that many of these qualities can continue into the painting area.

---

[7]Alexander F. Bick, Plastics: Projects and Procedures with Polyesters (Milwaukee: Bruce Publishing Co., 1962), p. 8.

[8]Ibid., p. 1.

CHAPTER III

STUDIO FINDINGS

The first necessary procedure for the production of a resin painting was to find a level, clean surface in a well ventilated area. It was found that the resin emitted an objectionable odor. One cannot stress enough the need for proper ventilation such as an exhaust fan or a cross breeze or both. Every precaution had to be taken to protect children from mishandling the poisonous chemicals.

I. SUITABLE GROUNDS FOR RESIN

The first hypothesis was in conjunction with suitable grounds for Clear Cast with masonite and canvas being of primary consideration. Before relating to any particular works, it is possible to generalize the results of the research.

In one procedure Clear Cast was applied to stretched canvas with a primer coat of gesso while in another, the resin was applied to raw, stretched canvas. In both cases the painting method was essentially the

same, but the gessoed canvases, upon completion, were very flexible, and easily cracked; while the canvases primed with resin were stiffer and resisted cracking. Priming the canvas was accomplished by thoroughly saturating the cloth with resin mixed with catalyst.

Masonite was used as a ground in both raw and prepainted states and seemed to serve as an efficient base in either case. Both one-quarter inch and one-eighth inch thicknesses of masonite were used with the thicker material being the better since it reduced the chances of the paintings' warping or cracking. The masonite panels that were braced on the back were also preferred over the unbraced panels, unless small works of twelve inches or less were being painted.

When pouring over thick collage materials or other embedments it was necessary to have a dam or edge to contain the resin. This was easily done by preframing the painting in such a way that the inside edge of the frame became the dam. Plate number eleven is an example in which the frame is used as the mold. Oil clay, water base clay, weather stripping, sheet plastic, sand and other forms of solid materials served as inner molds within the wood mold.

II. COLORANTS

Hypothesis number two asserts that oils and acrylics may serve as colorants for resin in addition to the dyes usually sold with the plastic. Many works were painted with oils, and, at times, the oils and the recommended dyes were used in the same painting with no apparent adverse effects. Acrylic, however, slightly retarded the hardening process, and upon curing, it occasionally would pit the Clear Cast's surface.

Oil paint was used because of its ability to serve as an opaque colorant and because it comes in a wider variety of colors than does the dye. When the oil paint was used as a colorant, it had a tendency to separate slightly, thus, it was essential to stir the resin more vigorously than the dye. More catalyst was needed with oils to harden the plastic, and the proportion of colorant to resin was kept low since an excessive quantity of colorant would have weakened the medium.

It is extremely difficult for this researcher to quote percentages for those desiring to know how much colorant is excessive. It could only be approximated when the resin was becoming weakened by noting a

difference in the time necessary for the resin to gel. Usually, oils and acrylics slowed the gelling process, and when mixed in a ratio excessive to that which was practical, the works gelled very slowly and remained tacky for some time. It was found that when works gelled slowly, the amount of colorant may have been excessive, the amount of catalyst insufficient, or the resin cooler than room temperature. However, when one is working with a considerable amount of colorant, he should reduce the quantity and observe the results. Colorants should be lightfast, weather-resistant, heat-resistant, and capable of thorough dispersion within the resin.

Hypothesis number three was accepted only after several techniques were employed. It was found that the resin did "dictate" to some degree the variety of styles a painter might use. Works which depended on minute or meticulous description were very difficult to paint due to the fluid nature of the resin. Works which were spontaneous and not dependent upon precisely directed brush strokes seemed to be more practical for this medium.

The drying times for these paintings varied, but all were termed quick-drying, thereby, limiting the

working time of each pour to forty minutes, or less. Each individual, through experimentation, could vary the amount of catalyst he used until he found an appropriate working time. Those painters desiring longer working times will need to add less catalyst per ounce of resin.

III. TECHNIQUES AND APPLICATION PROCEDURES

Resin painting may be assumed to be a tedious process, but the studio findings indicated the opposite to be true. One of the first completed works, "Red and Gold", is an example of the quickness of this medium since the painting took less than four hours to complete. A single pour of resin may cover a large portion of a painting, consequently reducing working time.

"Red and Gold", Plate I, was painted on an underframed piece of masonite with the main emphasis placed on structure. Ink was used to create texture. This texture was made possible by dropping the ink into the resin before the gel state was reached; and upon gelling, the resin bubbled and separated from the ink, leaving the masonite exposed. Many of the pours in this work were clear, and the color was added after the resin had set

for a few minutes.

Gold pigment was placed in a nearly gelled pour which prevented its sinking into the resin, thus, keeping the pigment bright. White opaque colorant was used in the upper left corner, and is responsible for the marble-like appearance found there. In all the paintings, the catalyst was added prior to each pour; thus, it was mixed with the resin before the plastic was poured or painted onto the ground.

It was difficult to control the resin when first experimenting with painting techniques, but after completing several works, greater control was gained by delaying the application of the medium until it had set in the mixing container for a few minutes. The most important item in the control of resin was making sure the plastic was poured on a level surface. Clear Cast will hold its shape, such as the red circle in, "The Bloodsucker", Plate II, providing the working surface is perfectly level.

"The Bloodsucker" had a copper spray base applied to the masonite followed by a red pour which made the circle. If too much resin had been poured, there would have been little chance of containing it, and its removal

would have been very messy. In the early gelling state the loose resin was brushed back into the circle after the resin had begun to set but before it coagulated. Resin that was brushed after coagulating would often remain rippled and, on occasion, pull loose from the backing. After the first pour had gelled, another was applied, still leaving the painted masonite base exposed in some areas to create texture. Dyes were the main colorants used in this work. The desired technique was in control of the artist, and the style did not have to be altered because of the resin's fluid nature.

"The Yellow Path", Plate III, was a pre-planned work using the flower design created by drops of dye on fresh and near-gelled pours. The working time for such a painting is usually eight or nine hours. During this time, there are "crucial" periods when one should not be interrupted. Interruption of the painter may cause him to miss the necessary moment at which the dyes should be applied since dyes applied too soon will run together, and those applied too late will not spread at all. To create such a painting, many layers must be poured, with the first pour usually being an opaque white. A heavy layer of bright oil color may serve as a base coat;

however, this paint may change the way the resin reacts. Oil paints will not dry as rapidly as the resin will cure, therefore, some irregularities in the surface may occur. In addition, adhesive qualities may not be as good.

The opaque yellow which gives the basic structural stability to this painting was applied in a near-gel state, while the other resin pours were still setting. The flower patterns resulted from transparent dye being dropped from a distance of two feet and occasionally being aided by use of a brush.

"Tree-Fire", Plate IV, is an example of the pastel color scheme illustrating that most intensities of color are obtainable in this medium. Since this painting's emphasis was placed on balance and structure, the work was not left during the early stages following each pour. The resin had a tendency to shift positions on the surface, thereby, changing many important features. It was necessary to be present at these times so the resin could be painted back into its original position, or the artist's intentions changed to coincide with the movement of the medium.

"Tree-Fire" had a liquid lead base applied to parts of the masonite panel and the original intention

was to contain the resin. Later, it was "painted out" which accounts for the thin, dark lines that are only slightly visible. Opaque dye was applied when the resin was initially poured. The dark-colored areas were added as the resin began to gel; and it was at this point that much of the painting surface was scratched and filled with transparent dye. A similar result was also obtained by tilting the painting and allowing the resin to run, which resulted in dyes overlapping, thus making colors darker. Thin, dark lines were made by dipping a tooth-pick in an opaque dye and passing it through a near-gelled resin.

Colors often became dark unless proper care was given to their application. A bright ground solved most of this problem; however, on occasion, it was necessary to add a small quantity of opaque white with some of the color applications to help keep the work light.

Not all resin paintings need be limited to the pour technique. "Nude in Yellow and Green Surroundings", Plate V, is an example of brushed-on resin. The plastic was mixed with a colorant, and catalyized greater than normal. Oils, acrylics, and opaque dye are permissable as colorants. This painting was canvas-backed and had a ground which prevented the resin from saturating the

cloth. When working on canvas it was found that the cloth had to be saturated, or the painting surface cracked when pushed or poked from the back side.

A saturated canvas did not crack when subjected to fairly hard blows, nor did it crack when exposed to an extreme temperature change. A few paintings did crack when they were carried from a house maintaining a seventy-six degree temperature into the outdoors where it was in the upper teens, with a strong wind. These were earlier works, usually on canvas.

When painting on canvas, this artist had a tendency to make thinner pours which produced a more typical "painting" effect; yet, this thinness is contrary to the nature of resin. All paintings should have been at least three-sixteenths to one-quarter of an inch thick for best results.

"Blue Irregular Shapes", Plate VI, is an example of pouring before the base or ground coat was dry. The moisture caused some tiny crystal-shaped irregularities in the resin. The irregularities could cause deterioration over a long period of time. The black background was of the same enamel paint used on the frames, and the blue and green colors were painted in oil. The resin

was applied to make the colors glossy in appearance and to build up a thick composition to create a feeling of depth in the work.

"Composition With Sand", Plate VII, was painted using both dye and oil colorants. The white and yellow areas were poured on the unprimed masonite with the red area being a red transparent dye. The orange colors were oil colorants mixed with resin and lightly covered in some areas by the red dye. The upper right-hand corner became more structurally valid with the addition of the oil colorants. Located in the upper right side of the painting, consisting of green and orange, are a series of small pieces of clear plastic applied to the white opaque, and colored with dyes. The clear pieces were first poured on wax paper, then peeled from their "backing" and applied to the white opaque with the aid of a clear, fresh resin. Clear resin was then sparingly applied to join the pieces to the main painting surface, and a small amount of dye was dropped into the resin at this time. The sand used in this work separated the transparent dye from the opaque.

"Sunburst", Plate 8, refers to a transparent painting which needed special preparation. Since

this type of painting was to have no solid background, thereby allowing light to show through, the resin was poured on a surface which could be peeled away from the plastic after curing. Mylar, a flexible plastic sheet, is excellent for this type of backing; and it may be stapled or glued to a frame made of wood. Care had to be taken to make sure the Mylar was tight against the wood, or the painting would have leaked. If a painting leaks, resin may become entrapped under the wood. In this case, the resin shrinks, putting a bind on the entrapped plastic which cannot move, thus, causing the edges to crack.

A close examination of plate VIII shows both a bright and a dull white. The bright color was applied directly from the bottle with a toothpick, and was brushed into position; while the dull white was mixed in a container, and poured onto the surface. The black lines in the upper portion of the work were trailed onto the surface while the lower lines were painted by brush.

The objects present in "Composition of Irregular Shapes", Plate IV, are all resin with one exception, the bottle cap. This painting illustrates the building qualities that can be obtained with resin. Pieces can

be added to these embedments until the desired thickness is obtained. The shapes that appear broken were first poured on wax paper and allowed to harden. Upon hardening, they were easily removed and were ready for use.

The wrinkled texture was the result of pouring resin over wet enamel paint and tilting the surface of the work, causing the resin and enamel to mix.

"Mixed Media Composition", Plate X, is an example of a resin painting with an oil base underpainting. The colors are combinations of oil paints and inks with a clear resin application cover, giving the painting both physical and visual depth. White opaque dye was applied last. This work cracked because the oil prevented the resin from saturating the canvas; however, it was corrected by pouring a thin layer of resin on the front of the work.

IV. RESIN AS A BINDER

Resin is capable of retaining objects with little or no special preparation, as illustrated in "The Defeated", Plate XI. The chessboard in this painting and the players were covered in a single pouring. The chessboard was painted with gesso and black magic marker. The marker

bled during the pouring, forming the textural appearance found in the work. If the chess pieces were to have been completely covered, the resin would have needed to be poured in several layers. Each layer could not have exceeded one-fourth of an inch or the possibility of cracking would have increased.

"Construction Number One", Plate XII, is a mixed-media composition which combines sheet plastics, enamel spray paint, dyes, and resin. The masonite panel was first sprayed black, then covered by a thin resin pour. The plastic sheets were placed into position, nailed in a few places, and joined in others through the use of a small torch. Resin was then poured over the entire work. After the painting was photographed for this paper it was altered, and a large piece of solid plastic was placed near the center of the work. The added piece was resin which had set in a jar until it had reached a near-gelled state. This thick piece (approximately two inches by three inches) was held in place by a thin pour of Clear Cast. Unlike many binders, the resin did not just hold the embedments, but actually became the painting medium.

The works represented in Plates I-XII were poured or painted in several layers, often without permitting

the under layer to cure. When this procedure was followed, the pours were usually within twenty minutes of each other and a minimum of catalyst was used. It should be remembered that the thicker pours required less catalyst per ounce than thinner pours. If more than nine drops of catalyst were added to an ounce of resin, the works did not exceed a depth of one-eighth inch. When the plastic was applied by the painting technique, the catalyst count could have been as high as ten drops to the ounce. In thin paintings, at room temperature, a minimum of six drops of catalyst per ounce was used.

The picture in Plate XIII shows the materials that were found necessary in many of the paintings with Clear Cast resin. Presto Paste, item two, was not used in the paintings, but was used in samples, where upon hardening, it created dams to hold the resin. Item three is a filler, for use with the resin; Plasta Solve, item four, served as a cleaning agent for brushes. The paper measuring cups were used for the mixing of resin, since they could be discarded after several pours. Items six and seven refer to the dyes that were used with the larger jars being the transparent colorants. Clear Cast

was mixed with the catalyst, item eight, for all pours mentioned in the studio findings. The transparent dyes were applied by eye droppers and brushes similar to those illustrated in the photograph.

CHAPTER IV

SUMMARY

Unusual media and techniques are frequently of considerable interest to many contemporary artists. Plastics, as an art media, have only become somewhat common since the mid 1960's. While there are countless forms of plastics, thermosetting plastics, such as Clear Cast, seem to be relatively unexplored in the painting field.

It was the purpose of this study to determine, through experimentation, the practicality of using Clear Cast as a painting medium. If the resin could be found to be a suitable medium for painting, it would provide a reasonably priced, easily acquired medium that artists could use.

This paper intended to stress painting methods and techniques, avoiding the study of the chemical aspects of plastics. The testing of permanency was beyond this researcher's capability; however, resource books did attest to most resins' stability. While some colorants have few undesirable short term effects, it

was beyond this researcher's capability to determine any long term effects.

The resin was evaluated on its ability to conform to this writer's intentions. Two painting grounds, and several colorants, were used to make twenty-two paintings and various sample pieces.

Canvas or masonite grounds may be used, but the thicker masonite panels were found to be more practical. When the canvas served as a ground it had to be thoroughly saturated in order to prevent cracking. The amount of catalyst mixed with the resin was important in determining working time.

Various colorants such as oil, acrylic, dye, ink, and metallic pigment were used. Oils and the recommended dyes were used in the same painting in several instances with no apparent adverse effects. Acrylic would occasionally pit the surface of the works creating rather interesting texture. Oil paint was used because of its ability to serve as an opaque colorant, and because it came in a wider variety of colors than did the dyes. All colorants used should be lightfast, weather-resistant, heat resistant, and capable of thorough dispersion within the resin.

Works which depended on minute or meticulous description were very difficult to paint while works that were more spontaneous and not dependent upon precisely directed brush strokes seemed to be more practical. The drying times for these paintings varied, but all were termed quick drying. Many people have assumed resin to be a tedious process, but the experiments indicated the opposite to be true. Greater control was gained during the painting process by delaying the application of the medium until it had set in the mixing container for a few minutes. A level working surface was a necessity for obtaining good painting results.

Unlike many binders, the resin did not just hold the embedments, but actually became the painting medium. Works were frequently poured or painted in several layers, often without permitting the underneath layer to cure. When this procedure was followed, the pours were within twenty minutes of each other, and a minimum of catalyst was used. The thicker pours required less catalyst per ounce than the thinner pours.

Rooms with proper ventilation and limited access are extremely necessary for the safe and healthy production

of paintings. Every precaution should be taken to protect children from mishandling the poisonous chemicals.

CHAPTER V.

CONCLUSIONS

In review of the results of the labratory experiments, the first hypothesis must be accepted as practical and correct, with best results being obtained through the use of one-quarter inch, braced masonite. It was previously stated that several works had broken when exposed to sixty degree temperature change. It is important to note that none of the works were of the later series, when the construction of the paintings was better. The earlier works were paper collages or paintings that had been done on gesso-primed canvas. It is this researcher's belief that the better-constructed works would not be as subject to cracking if they were sufficiently wrapped and allowed to gently absorb the temperature change. This belief is based on the results obtained later, from samples that were subjected to the extreme temperature changes for observation.

Transparent paintings were not too difficult, provided each pour did not exceed one-quarter inch.

Exceeding this thickness in one pour often produced too much heat and the painting warped or cracked. This writer had more difficulty with large paintings without masonite grounds than those paintings with the ground. The masonite seemed to add strength to the resin as it lessened the need for a thicker pour.

The second hypothesis concerning the ability of Clear Cast to be colored by means other than the recommended dye, was also found to be acceptable. Plates V through X, with the exception of Plate VIII, were examples of works that had oil paint as at least part of the colorant, apparently with no adverse effects. Plate V, plus several samples, were made with acrylic as the colorant, and, in most cases, the paint mixed well with the resin. In some instances the surface did pit; however, this formed an interesting texture on the painting surface. Inks, metallic pigments, and enamel paints were also used as colorants, usually with success.

In regard to the third hypothesis, the following comments give reason for accepting it as previously stated. If one were to study Plates I through XII, it would become apparent that several techniques are possible with the medium. The resin may limit the number of styles

since techniques which are meticulous in nature are extremely unwieldy. It was difficult to retain an actual brushstroke with resin, but it was not too difficult to create specific shapes and retain them. As a medium, the resin is flexible enough to allow one to be either deliberate or uninhibited in his painting approach. Clear Cast was successfully adapted to various techniques with little or no special preparation of materials necessary.

This researcher found Clear Cast to be suitable as a painting medium provided one would heed all health warnings which accompany the resin.

Through additional research, one might find other ways of using resin as a painting medium. There are several possible grounds which were not used that may be of interest to the reader. One may pursue the idea of using fiber glass as a ground, or strips of cloth which have been saturated with resin. These strips may add interesting textural qualities to a painting.

Styrofoam may serve as a building agent for resin constructions as could sheet plastics. Additional colorants might be found through experimentation with cake dyes, Rit, natural objects, or any other material that

might be capable of dispersion within the resin. Painting with resin was interesting to this researcher and it is his wish that this thesis may be of benefit to prospective users of this medium. As a final word of caution, all health warnings associated with this material should be taken seriously.

APPENDIX

PLATE I.

Red and Gold July, 1967

18" by 24"

PLATE II.

The Bloodsucker August, 1968

18" by 24"

PLATE III.

The Yellow Path August, 1968

24" by 30"

PLATE IV.

Tree-Fire August, 1968

18" by 24"

PLATE V.

Nude in Yellow and Green Surroundings December, 1967

20" by 36"

PLATE VI.

Blue Irregular Shapes June, 1969

12" by 16"

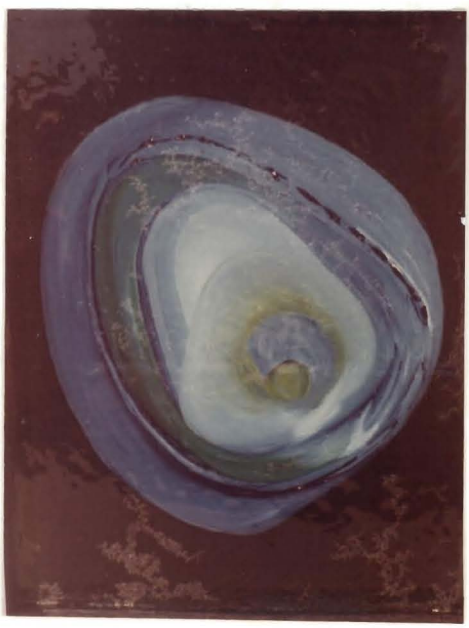

PLATE VII.

Composition of Irregular Shapes June, 1969

12" by 16"

PLATE VIII.

Sunburst August, 1968

12" by 14"

PLATE IX.

Composition With Sand April, 1969

24" by 48"

PLATE X.

Mixed Media Composition November, 1967

15" by 18"

PLATE XI.

The Defeated April, 1969

18" by 18"

PLATE XII.

Construction Number One July, 1969

34" by 34"

PLATE XIII.

Basic Painting Materials


PLASTA-SOLVE
CLEAR CAST
5
4
3
2
8
6
9
7

BIBLIOGRAPHY

SELECTED BIBLIOGRAPHY

A. BOOKS

r, Alexander F. Plastics: Projects and Procedures with Polyesters. Milwaukee: Bruce Publishing Company, 1962. 108 pp.

r, Gordon J. The Miracle of Plastics. New York: The Dial Press, 1964. 272 pp.

bis J. Hary, and John Frederick. Plastics. New York: Reinhold Publishing Corporation, 1967. 342 pp.

r. Clear Cast. Fort Worth: American Handicrafts Company, 1964. 34 pp.

man, Thelma R. Plastic As An Art Form. Philadelphia: Chilton Company, 1964. 338 pp.

ton, Harry. Plastic for the Home Craftsman. New York: McGraw-Hill Book Company, Inc., 1951.

B. PERIODICALS

lo, Frank. Art Magazine. (November, 1967) p. 57.

ar, Irene. "Lucite and Plexiglas Sculpture," Art Magazine, XLII (Dec.--Jan., 1968) p. 62.